

AUTHOR INDEX

- Aaron, E. A., *see* Sharratt, M. T., 313
- Adams, L., Schneider, D. A., Schertel, E. R., Strong, E. B. and Green, J. F., Respiratory reflexes in the anesthetized miniature swine, 343
- Baer, R. E., Leeman, M., Farkas, G. A., Naeije, R. and De Troyer, A., The increased expiratory muscle use in upright dogs: role of cardiovascular receptors, 359
- Baker, M. A., *see* Schroter, R. C., 97
- Banchero, N., *see* Kayar, S. R., 275
- Banzett, R. B., Butler, J. P., Nations, C. S., Barnas, G. M., Lehr, J. L. and Jones, J. H., Inspiratory aerodynamic valving in goose lungs depends on gas density and velocity, 287
- Barnas, G. M., *see* Banzett, R. B., 287
- Bartlett, Jr., D., Knuth, S. L. and Ward, D. K., Influence of extreme hypercapnia on respiratory motor nerve activity in cats, 173
- Bates, J. H. T., Sly, P. D., Kochi, T. and Martin, J. G., The effect of a proximal compliance on interrupter measurements of resistance, 301
- Beadle, R. E., *see* Powers, S. K., 251
- Berssenbrugge, A. D., *see* Daristotle, L., 63
- Bisgard, G. E., *see* Daristotle, L., 63
- Bradley, C. L., *see* Norfleet, W. T., 369
- Burggren, W. W., Dupré, R. K. and Wood, S. C., Allometry of red cell oxygen binding and hematology in larvae of the salamander, *Ambystoma tigrinum*, 73
- Burke, W., *see* Mekjavic, I. B., 121
- Butler, J. P., *see* Banzett, R. B., 287
- Cherniack, N. S., *see* Haxhiu, M. A., 183
- Cymerman, A., *see* Moore, L. G., 195
- Daristotle, L., Berssenbrugge, A. D. and Bisgard, G. E., Hypoxic-hypercapnic ventilatory interaction at the carotid body of awake goats, 63
- Davis, P. J., Macefield, G. and Nail, B. S., Laryngeal motoneurone activity in the rabbit during asphyxic gasping, 327
- De Ribapierre, Y., *see* Raddatz, E., 1
- De Troyer, A., *see* Baer, R. E., 359
- De Troyer, A., *see* Gilmartin, J. J., 159
- Dempsey, J. A., *see* Sharratt, M. T., 313
- Dupré, R. K., *see* Burggren, W. W., 73
- Eldridge, F. L. and Kiley, J. P., Effects of hyperoxia on medullary ECF pH and respiration in chemodenervated cats, 37
- Farkas, G. A., *see* Baer, R. E., 359
- Fouke, J. M., *see* Hafer, C. E., 13
- Gallo, Jr., L., *see* Terra-Filho, J., 265
- Gilmartin, J. J., Ninane, V. and De Troyer, A., Abdominal muscle use during breathing in the anesthetized dog, 159
- Green, J. F., *see* Adams, 343
- Guenard, H., Varene, N. and Vaida, P., Determination of lung capillary blood volume and membrane diffusing capacity in man by the measurements of NO and CO transfer, 113
- Hafer, C. E., Strohl, K. P. and Fouke, J. M., Phasic changes in upper airway impedance, 13
- Hampson, N. B., Jobsis-VanderVliet, F. F. and Piantadosi, C. A., Skeletal muscle oxygen availability during respiratory acid-base disturbances in cats, 143
- Haxhiu, M. A., Van Lunteren, E., Mitra, J. and Cherniack, N. S., Comparison of the response of diaphragm and upper airway dilating muscle activity in sleeping cats, 183
- Henke, K. G., *see* Sharratt, M. T., 313
- Hill, N. S., Ou, L. C., Thron, C. D. and Smith, R. P., Time course of cardiopulmonary responses to high altitude in susceptible and resistant rat strains, 241
- Hill, N. S., Sardella, G. L. and Ou, L. C., Reticulocytosis, increased mean red cell volume, and

- greater blood viscosity in altitude susceptible compared to altitude resistant rats, 229
- Holmes, R., *see* Schroter, R.C., 97
- Huang, S.-Y., *see* Moore, L.G., 195
- Jelkmann, W., *see* Roszinski, S., 131
- Jobsis-VanderVliet, F.F., *see* Hampson, N.B., 143
- Jones, J.H., *see* Banzett, R.B., 287
- Kayar, S.R. and Banchero, N., Volume density and distribution of mitochondria in myocardial growth and hypertrophy, 275
- Kiley, J.P., *see* Eldridge, F.L., 37
- Knuth, S.L., *see* Bartlett, Jr., D., 173
- Kochi, T., *see* Bates, J.H.T., 301
- Kučera, P., *see* Raddatz, E., 1
- La Prairie, A., *see* Mekjavic, I.B., 121
- Lawler, J., *see* Powers, S.K., 251
- Leeman, M., *see* Baer, R.E., 359
- Lehr, J.L., *see* Banzett, R.B., 287
- Lindborg, B., *see* Mekjavic, I.B., 121
- Macefield, G., *see* Davis, P.J., 327
- Maciel, B.C., *see* Terra-Filho, J., 265
- Malte, H. and Weber, R.E., The effect of shape and position of the oxygen equilibrium curve on extraction and ventilation requirement in fishes, 221
- Manco, J.C., *see* Terra-Filho, J., 265
- Marin-Neto, J.A., *see* Terra-Filho, J., 265
- Martin, J.G., *see* Bates, J.H.T., 301
- Martin-Body, R.L. and Sinclair, J.D., Differences in respiratory patterns after acute and chronic pulmonary denervation, 205
- McCullough, R.E., *see* Moore, L.G., 195
- McCullough, R.G., *see* Moore, L.G., 195
- Mekjavic, I.B., La Prairie, A., Burke, W. and Lindborg, B., Respiratory drive during sudden cold water immersion, 121
- Mitra, J., *see* Haxhiu, M.A., 183
- Moore, L.G., Cymerman, A., Huang, S.-Y., McCullough, R.E., McCullough, R.G., Rock, P.B., Young, A., Young, P., Weil, J.V. and Reeves, J.T., Propranolol blocks metabolic rate increase but not ventilatory acclimatization to 4300 m, 195
- Mortola, J.P. and Piazza, T., Breathing pattern in rats with chronic section of the superior laryngeal nerves, 51
- Naeije, R., *see* Baer, R.E., 359
- Nail, B.S., *see* Davis, P.J., 327
- Nations, C.S., *see* Banzett, R.B., 287
- Ninane, V., *see* Gilmartin, J.J., 159
- Norfleet, W.T. and Bradley, C.L., Can eucapnic hyperventilation prolong a subsequent breath-hold?, 369
- Ou, L.C., *see* Hill, N.S., 229, 241
- Pegelow, D.F., *see* Sharratt, M.T., 313
- Piantadosi, C.A., *see* Hampson, N.B., 143
- Piazza, T., *see* Mortola, J.P., 51
- Pinder, A.W., Cutaneous diffusing capacity increases during hypoxia in cold submerged bullfrogs (*Rana catesbeiana*), 85
- Powers, S.K., Beadle, R.E., Lawler, J. and Thompson, D., Oxygen deficit-oxygen debt relationships in ponies during submaximal treadmill exercise, 251
- Raddatz, E., Kučera, P. and De Ribaupierre, Y., Micro-measurement of total and regional CO₂ productions in the one-day-old chick embryo, 1
- Reeves, J.T., *see* Moore, L.G., 195
- Robertshaw, D., *see* Schroter, R.C., 97
- Rock, P.B., *see* Moore, L.G., 195
- Roszinski, S. and Jelkmann, W., Effect of P_{O₂} on prostaglandin E₂ production in renal cell cultures, 131
- Russell, J.A., Presynaptic α -2 receptors inhibit norepinephrine release in tracheal smooth muscle, 25
- Sardella, G.L., *see* Hill, N.S., 229
- Schertel, E.R., *see* Adams, L., 343
- Schmidt-Nielsen, K., *see* Schroter, R.C., 97
- Schneider, D.A., *see* Adams, L., 343
- Schroter, R.C., Robertshaw, D., Baker, M.A., Shoemaker, V.H., Holmes, R. and Schmidt-Nielsen, K., Respiration in heat stressed camels, 97
- Sharratt, M.T., Henke, K.G., Aaron, E.A., Pegelow, D.F. and Dempsey, J.A., Exercise-induced changes in functional residual capacity, 313
- Shoemaker, V.H., *see* Schroter, R.C., 97
- Sinclair, J.D., *see* Martin-Body, R.L., 205
- Sly, P.D., *see* Bates, J.H.T., 301

- Smith, R.P., *see* Hill, N.S., 241
Strohl, K.P., *see* Hafer, C.E., 13
Strong, E.B., *see* Adams, L., 343
- Terra-Filho, J., Manco, J.C., Gallo, Jr., L.,
Marin-Neto, J.A. and Maciel, B.C., Effects
of intravenous atropine on static P-V curves
of the lung in normal man, 265
Thompson, D., *see* Powers, S.K., 251
Thron, C.D., *see* Hill, N.S., 241
Topor, Z.L., *see* West, N.H., 377
- Vaida, P., *see* Guenard, H., 113
Van Lunteren, E., *see* Haxhiu, M.A., 183
- Van Vliet, B.N., *see* West, N.H., 377
Varene, N., *see* Guenard, H., 113
- Ward, D.K., *see* Bartlett, Jr., D., 173
Weber, R.E., *see* Malte, H., 221
Weil, J.V., *see* Moore, L.G., 195
West, N.H., Topor, Z.L. and Van Vliet, B.N.,
Hypoxemic threshold for lung ventilation in
the toad, 377
Wood, S.C., *see* Burggren, W.W., 73
- Young, A., *see* Moore, L.G., 195
Young, P., *see* Moore, L.G., 195

SUBJECT INDEX

- Abdominal muscles, 159
- Acclimatization to high-altitude, 195, 229, 241
- Airway receptors, 25
- Airway resistance, 13, 301
- Airway smooth muscle, 25, 265, 301
- Allometric relations
 - respiratory -, 73
- Altitude
 - high - acclimatization, 195, 229, 241
- Anesthesia, 205
- Animals
 - Amphibians, 85, 377
 - bullfrog, 85
 - camelids, 97
 - cat, 37, 143, 173, 183
 - chicken, 1
 - dog, 13, 25, 159, 359
 - fish, 221
 - goose, 287
 - guinea-pig, 275
 - horse, 251
 - humans, 113, 121, 195, 251, 265, 313, 369
 - mini pig, 343
 - rabbit, 327
 - rat, 51, 131, 205, 229, 241
 - salamander, 73
 - toad, 377
- Asphyxia, 327
- ATP, 275
- Autonomic nervous system, 195, 265
- Avian embryo, 1
- Beta-receptor, 195
- Birds
 - respiration in -, 287
- Blood
 - Hill coefficient, 73, 221
 - red cell
 - volume, 73
- Blood flow
 - cerebral -, 37
- Blood gas
 - Bohr effect, 73
 - 2,3-diphosphoglycerate, 251
 - Haldane effect, 37
 - oxygen affinity, 73, 221
- Bohr effect, 73
- Brain, 97
- Breath holding, 371
- Breathing pattern, 97, 205
- Breuer-Hering reflexes, 205, 343
- Bronchomotricity, 301
- Capsaicin, 343
- Carbon dioxide, 1
 - stores, 371
 - ventilatory response to -, 173, 205, 343, 377
- Cardiac muscle, 275
- Cardiac output, 251
- Catecholamines, 25
- Cerebral blood flow, 97
- Chemoreceptors
 - arterial -, 377
 - central -, 37
- Chest wall, 159
- Cold exposure, 121
- Compliance
 - lung -, 265, 301
- Control of breathing, 37, 51, 121, 173, 183, 313, 343
 - breath holding, 369
 - Breuer-Hering reflexes, 205, 343
 - carbon dioxide
 - ventilatory response to -, 173, 205, 343, 377
 - chemoreceptors
 - central, 37
- Cutaneous respiration, 85
- Cytochrome *a/a₃*, 143
- Diffusion
 - of gases, 85
 - alveolar-capillary, 113
 - single breath technique for D_{CO} , 113
- Diphosphoglycerate, 251
- Distribution
 - of ventilation, 287

- Egg's incubation, 1
Electromyogram, 359
Epithelium, 1
Erythrocyte, *see* Red cell
Erythropoietin, 131
Esophageal pressure, 265, 313
Exercise, muscular, 251, 313
 arterial blood, 251
 cardiac output, 251
Extracellular fluid, 37
Extraction coefficient, 221

Frequency of breathing, *see* Breathing pattern

Gas
 – density, 287
Gas flow in the airways, 287
Gas stores
 CO₂ stores, 369

Haldane effect, 37
Heart, 241, 275
Hematocrit, 73, 229, 241
Hemoglobin, 73
Hering–Breuer reflexes, 205, 343
Heymans-type chemoreceptors, 377
High-frequency ventilation, 13
Hill coefficient, 73, 221
Hyperoxia, 37
Hypoglossal nerve, 173, 183
Hypoxia, 51, 85, 131, 275, 377

Intercostal muscles, 173

Kidney, 131

Larynx, 51, 329
Lung
 compliance, 265, 301
 mechanoreceptors, 205
 volume, 313

Mechanics of breathing, 287
 airway resistance, 13, 301
 chest wall, 159
 pulmonary compliance, 265, 301
Mitochondrion, 143, 275
Models
 – in respiratory physiology, 343
Morphometry, 275
Mountain sickness, 229, 241

Muscle
 respiration of skeletal, 143
Muscular exercise, *see* Exercise, muscular
Myocardium, *see* Cardiac muscle

Oxygen, *see* Altitude, Blood gas, Diffusion and Hypoxia
Oxygen consumption, 73, 85, 143, 195, 251
Oxygen debt, 251
Oxygen stores, 143

P₅₀, 73, 221
Phrenic nerve, 37, 173, 183
Polypnea
 thermal –, 97
Posture, 159
 effect of – on pulmonary compliance, 359
Propanolol, 195
Prostaglandins, 131
Pulmonary circulation, 229, 241
 pulmonary capillary volume, 113
Pulmonary receptors, 205

Red cell, 73, 229
Regulation of respiration, *see* Control of breathing
Respiratory centers, 37
Respiratory frequency, *see* Breathing pattern
Respiratory muscles, 359
 chemoreflexes, 377
Respiratory stimuli, 97, 121
 carbon dioxide (hypercapnic drive), 173, 205, 343, 377

Skin
 – respiration, 85
Sleep
 respiration in –, 183
Specific ventilation, 221
Stretch receptors, 205

Temperature
 effect of body – on breathing, 97, 121
Tidal volume, *see* Breathing pattern and Lung, volume
Trachea, 25

Vagus nerve
 block or section of –, 51, 159, 205, 265, 343
Ventilation distribution, 287
Ventilation/perfusion ratio, 221
Ventilation requirement, 221

Ventilatory chemoreflexes, 377

Ventilatory response to hypercapnia, 173, 205,
343, 377

Ventilatory response to hypoxia, 51, 85, 131, 195,
275, 377

Water-ventilation requirement, *see* Specific venti-
lation

